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09/416,414	10/12/1999	INDERPAL S. BHANDARI	VG-001	6138

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EXAMINER
COLBERT, ELLA

ART UNIT	PAPER NUMBER
3624	

DATE MAILED: 08/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/416,414	Applicant(s) BHANDARI ET AL.	
	Examiner Ella Colbert	Art Unit 3624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 June 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *29-96* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *29-96* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Applicants' election with traverse of claims 29-96 filed 05/23/02 in Paper No. 8 is acknowledged. The traversal on the ground(s) that Applicants' believe that the restriction requirement is improper and therefore make the election with traverse.

Applicants' submit that the examination of the claims in group I with those of group II (provisionally elected herein) would place an extra burden in the Patent and Trademark Office to examine the allegedly separate invention in a single patent application. Applicants' submit that these Groups of claims do not constitute distinct inventions such as to require that their subject matter be prosecuted in a separate application. This is not found persuasive because Applicants' Group I claims 1-28 classed in class 446, subclass 369 are directed to finding strings, determining strings, determining the result, and comparing the results. Applicants' Group I claims 1-28 are distinctly related to finding and determining strings, determining and comparing the results. Applicants' Group II claims 29-96 are classed in class 707, subclass 3 and are distinctly related to finding queries, receiving a user query, computing a result, and comparing the result. Thus, two different areas of search are required for Groups I and II and therefore, the restriction is considered proper.

Claims 29-96 are examined and claims 1-28 have been withdrawn from consideration.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 29, 37, 39, 50, 54, 57, 62, 63, 65-67, 76, 93, 94, & 96 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claimed feature "string" in claims 29, 37, 39, 50, 54, 57, 62, 63, 65-67, 76, 93, 94, & 96 is not clear. Do Applicants' mean "character string," "text string," "data string," or "symbol string"?

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 29-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over (US 4,490,811) Yianilos et al, hereafter Yianilos.

With respect to claim 29, Yianilos teaches, receiving a user query consisting of at least one computation and an attribute-valued string having one or more elements, each element being associated with an attribute having a value assigned by a user or a user process (col. 5, lines 11-18 and lines 29-35, col. 7, lines 66-68, col. 10, lines 4-14, col. 17, lines 37-46, and fig. 1, steps 101 & 105); determining queries in a plurality of queries having the at least one computation and sharing one or more elements in common with the user query to provide a set of related queries (col. 19, lines 1-17 and lines 46-67 and col. 20-4-22); and computing a result of the at least one computation for the

attribute-valued string associated with each query in the set of related queries (col. 24, lines 1-66). Yianilos did not teach, comparing the results associated with the set of related queries to determine one or more queries having the greatest-valued result, or one or more queries having the least-valued result, but it would have been obvious to one having ordinary skill in the art at the time the invention was made to compare the results associated with the set of related queries to determine one or more queries having the greatest-valued result, or one or more queries having the least-valued result and to modify in Yianilos in view of Yianilos' teachings of queries and values and because such a modification would allow Yianilos to compare the results of the words and to perform a computation to arrive at either a greatest-value or a least value attribute.

With respect to claim 30, Yianilos teaches, selecting the at least one computation from a plurality of computations in response to a user or user process input (col. 3, lines 47-68 and col. 4, lines 1-2); selecting one or more attributes from a plurality of attributes in response to the user input (col. 4, lines 3-28); and selecting a value for each attribute selected in response to the user input to form an element (col. 4, 67-68 and col. 5, lines 1-18).

With respect to claim 31, Yianilos teaches, wherein the at least one computation defines a relationship between the plurality of queries and a plurality of results (col. 5, lines 58-68, col. 6, lines 1-17, col. 8, lines 46-49, col. 13, lines 24-60).

With respect to claim 32, Yianilos teaches, wherein the results associated with the related queries are numeric results (col. 18, lines 27-32).

With respect to claim 33, Yianilos teaches, comprising the step of generating a list of queries having the at least one computation, each query being associated with an attribute-valued string having the greatest-valued result of all queries in the plurality of queries sharing one or more elements in common with a preceding query or a succeeding query in the list (col. 20, lines 4-22 and col. 24, lines 5-66).

With respect to claim 34, Yianilos teaches, the step of generating a list of queries having the at least one computation, each query being associated with an attribute-valued string having the greatest-valued result of all queries in the plurality sharing one or more elements in common with a preceding query or succeeding query in the list (col. 8, lines 41-45, col. 20, lines 4-22, fig. 11, step 130 (shows list), & fig. 21).

With respect to claims 35, 37, & 63, Yianilos teaches, the list of queries yields a non-decreasing succession of numeric results and wherein the step of generating a list comprises the steps of:

(a) adding the query in the set of related queries having the greatest-valued result as a last query in the list (col. 3, lines 21-67) and (g) repeating steps (b) through (e) until there is no query in the plurality of queries having a result greater than the last query and sharing one or more elements in common with the last query (col. 5, lines 11-18 and lines 29-35, col. 7, lines 66-68, col. 10, lines 4-14, col. 19, lines 1-17 and lines 46-67, col. 20, lines 4-22, and col. 24, lines 1-66).

Yianilos did not teach, (f) adding the query having the greatest-valued result to the end of the list as a new query if it is determined that the new last query is not equivalent to the last query and (g) repeating step (f) until there is no query in the plurality of queries

having a result greater than the last query and sharing one or more elements in common with the last query, but it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the query having the greatest-valued result to the end of the list as a new query if it is determined that the new last query is not equivalent to the last query and to repeat the steps including step (f) until there is no query in the plurality of queries having a result greater than the last query and sharing one or more elements in common with the last query and to modify in Yianilos because such a modification would allow Yianilos to search a question that tells the program what kind of data should be retrieved from the database. A query is known in the art for specifying the characteristics (criteria) used to guide the computer to the required information.

These claims dependent are also rejected for the similar rationale given for claims 29 & 33.

With respect to claim 36, Yianilos teaches, comprising the step of selecting one query as the query having the least-valued result if it is determined that more than one query in the set of related queries has the least valued result (col. 15, lines 41-50). This dependent claim is also rejected for the similar rational as given for claim 33.

With respect to claims 37 & 65, these dependent claims are rejected for the similar rationale as given for claim 35.

With respect to claims 38, 54, 66, 93, & 96, these claims are rejected for the similar rationale given for claim 35.

With respect to claims 39, 55, and 67, these claims are rejected for the similar rationale as given for claims 29 and 35.

With respect to claims 40, 56, & 68, Yianilos did not teach, wherein the step (d) further comprises the steps of determining whether the first query has the greatest-valued result or the least-valued result, but it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the step (d) further comprise the steps of determining whether the first query has the greatest-valued result or the least-valued result and to modify in Yianilos because such a modification would allow Yianilos to search a question that tells the program what kind of data should be retrieved from the database. A query is known in the art for specifying the characteristics (criteria) used to guide the computer to the required information.

With respect to claims 41 and 69, these dependent claims are rejected for the similar rationale given for claims 29, 34, 35, & 39.

With respect to claims 42, 70, & 75, Yianilos teaches, determining whether any query in the set of related queries is in the pre-computed greatest-valued list to provide a set of max queries (col. 5, lines 1-26) and determining whether any query in the set of related queries is in the pre-computed least –valued list to provide a set of min queries (col. 5, lines 29-46).

With respect to claims 43 and 71, Yianilos teaches, the step of displaying the user query and the result of the user query along with the greatest-valued result and one or more queries having the greatest-valued result (col. 19, lines 29-68 and col. 20, lines 22 (display) "appear".

With respect to claims 44 and 72, Yianilos teaches, the step of displaying further displays the least-valued result and one or more queries having the least-valued result (col. 23, lines 24-50 (display) "observe."

With respect to claims 45 and 73, Yianilos teaches, the step of displaying the user query and the result of the user query along with each query and the corresponding greatest-valued result in the list (col. 2, lines 31-38 and col. 27, lines 32-40).

With respect to claims 46 and 74, these dependent claims are rejected for the similar rationale given for claims 44 and 45.

With respect to claim 47, this dependent claim is rejected for the similar rationale given for claims 43 and 45.

With respect to claim 48, this dependent claim is rejected for the similar rationale given for claims 35, 38, 39, 44, & 46.

With respect to claim 49, this dependent claim is rejected for the similar rationale given for claim 42.

With respect to claims 50 and 76, these independent claims are rejected for the similar rationale given for claims 29, 38, 41, & 42.

With respect to claims 51 and 77, these dependent claim are rejected for the similar rationale given for claim 31.

With respect to claims 52 and 78, these dependent claims are rejected for the similar rationale given for claims 42, 43, & 45.

With respect to claims 53 and 79, these dependent claims are rejected for the similar rationale given for claims 42 & 44.

With respect to claims 54, 93, and 96, Yianilos teaches, (g) assigning another computation from the plurality of computations as the first computation (col. 13, lines 30-55) and (h) repeating steps (f) through (g) for every computation in the plurality of computations (cool. 10, lines 45-52, col. 11, lines 5-38, and col. 13, lines 30-55). These independent claims are rejected for the similar rationale given for claims 29 and 35.

With respect to claims 55 and 94, these dependent claims are rejected for the similar rationale as given for claim 39.

With respect to claims 56 and 95, these dependent claims are rejected for the similar rationale as given for claim 40.

With respect to claims 57 and 96, Yianilos teaches a device for receiving a user query, a device for determining, a computing device, and a comparator for comparing (col. 7, lines 64-68).
These independent claims are rejected for the similar rationale given for claim 29.

With respect to claim 58, this dependent claim is rejected for the similar rationale given for claim 30.

With respect to claim 59, this dependent claim is rejected for the similar rationale given for claims 31 and 51.

With respect to claim 60, this dependent claim is rejected for the similar rationale given for claim 32.

With respect to claim 61, this dependent claim is rejected for the similar rationale given for claim 33.

With respect to claim 62, this dependent claim is rejected for the similar rationale given for claim 34.

With respect to claim 63, this dependent claim is rejected for the similar rationale given for claim 35 & 37.

With respect to claim 64, this dependent claim is rejected for the similar rationale given for claim 36.

With respect to claim 65, this dependent claim is rejected for the similar rationale given for claims 35 and 38.

With respect to claim 67, this dependent claim is rejected for the similar rationale given for claim 39.

With respect to claim 68, this dependent claim is rejected for the similar rationale given for claims 40 and 56.

With respect to claim 69, this dependent claim is rejected for the similar rationale given for claim 41.

With respect to claim 70, this dependent claim is rejected for the similar rationale given for claim 42.

With respect to claim 71, this dependent claim is rejected for the similar rationale given for claim 43.

With respect to claim 72, this dependent claim is rejected for the similar rationale given for claim 44.

With respect to claim 73, this dependent claim is rejected for the similar rationale given for claim 45.

With respect to claim 74, this dependent claim is rejected for the similar rationale given for claim 46.

With respect to claim 75, this dependent claim is rejected for the similar rationale given for claim 42.

With respect to claim 76, this independent claim is rejected for the similar rationale given for claim 50.

With respect to claim 77, this dependent claim is rejected for the similar rationale given for claims 31 and 51.

With respect to claim 78, this dependent claim is rejected for the similar rationale given for claim 52.

6. Claims 79-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yianilos in view of (US5,802,515) Adar et al, hereafter Adar.

With respect to claim 79, Yianilos did not teach, the step of displaying displays each query and the corresponding least-valued result in the set of min queries.

Adar discloses, the step of displaying displays each query and the corresponding least-valued result in the set of min queries (col. 3, lines 51-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a step or displaying displays for each query and the corresponding least-valued result in the set of min queries and to modify in Yianilos because such a modification

would allow Yianilos to compute a rank value for each of the documents in the set of queries, the number of queries and the lowest rank value to arrive at a result.

With respect to claims 80, 81, 82, 84, & 86-92, Yianilos did not teach, a computing device operable to compute results for sports data, call center data, customer relationship management data, multimedia data, tennis data, soccer data, golf data, football data, baseball data, and cricket data. Adar discloses a computing device operable to compute results for sports data, call center data, customer relationship management data, multimedia data, tennis data, soccer data, golf data, football data, baseball data, and cricket data (col. 4, lines 58-65 and col. 9, lines 7-17). Sports data, call center data, customer relationship management data, multimedia data, tennis data, soccer data, golf data, football data, baseball data, and cricket data are merely attributes to obtain a result of a computation.

With respect to claim 83, Yianilos did not teach, the computing device is operable to compute results for banking data. Adar discloses, the computing device is operable to compute results for banking data (col. 1, lines 26-30). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a computing device operable to compute results for banking data and to modify in Yianilos because such a modification would allow Yianilos to retrieve large amounts of computed information from databases.

With respect to claim 85, Yianilos did not teach, the computing device is operable to compute results for textual data. Adar teaches, the computing device is operable to compute results for textual data (col. 5, lines 2-17). It would have been obvious to one

having ordinary skill in the art at the time the invention was made to have a computing device operable to compute results for textual data and to modify in Yianilos because such a modification would allow Yianilos to provide text to a text string processor from a preexisting source with the text string processor receiving the input text string.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Miller (US 6,119,120) disclosed using a data structure to find data patterns in a data string.

Li (US 5,774,588) disclosed a method and system for comparing strings.

Noguchi et al (US 5,706,496) disclosed searching a text that is a continuous sequence of characters.

Kaplan et al (US 5,564,058) disclosed stored string data and values that indicate search information.

Inquiries

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ella Colbert whose telephone number is 703-308-7064. The examiner can normally be reached on Monday-Thursday from 6:30 am -5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent Millin can be reached on 703-308-1038. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-746-5622 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

E. Colbert

E. Colbert

August 6, 2002